PROJECT REPORT

Date	21-11-2022
Team ID	PNT2022TMID49099
Project Name	IoT based Safety Gadget for Child Safety Monitoring and Notification

1.INTRODUCTION

1.1 Project Overview

The overall percentage of child abusement filed nowadays in the world is about 80%, out of which 74% are girl children and the rest are boys. For every 40 seconds, a child goes missing in this world. Children are the backbone of one's nation, if the future of children was affected, it would impact the entire growth of that nation. Due to the abusement, the emotional and mental stability of the children gets affected which in turn ruins their career and future. These innocent children are not responsible for what happens to them. So, parents are responsible for taking care of their own children. But, due to economic condition and aims to focus on their child's future and career, parents are forced to crave for money. Hence, it becomes difficult to cling on to their children all the time. In our system, we provide an environment where this problem can be resolved in an efficient manner. It makes parents to easily monitor their children in real time just like staying beside them as well as focusing on their own career without any manual intervention. .

Child tracker helps the parents in continuously monitoring the child's location. They can simply leave their children in school or parks and create a geofence around the particular location. By continuously checking the child's location notifications will be generated if the child crosses the geo-fence. Notifications will be sent according to the child's location to their parents or caretakers. The entire location data will be stored in the database.

1.2 Purpose

➤ Enable tracking of the child's location and capturing of data remotely such as where the child located distance etc.

➤ To show the child 's actual data with reference values.

➤ Enable sending of notification if the child is out of location or when the device realizes abnormal conditions/ situations.

➤ Develop a prototype of IOT wearable smart band connected to parents Mobile apps so that they can monitor the actual condition of children at anytime and anyplace.

2.LITERATURE SURVEY

2.1 Existing Problem

Parents need to ensure safety of their children but in real time they need to get to work and need to worry about their child whether he/she is safe or not. So to ensure safety they need to monitor & to notify their child what he/she is doing and to know whether they are in safe atmosphere or not to ensure the safety of the child.

2.2 References

A.RFID-based System for School Children Transportation Safety Enhancement

This paper presents a system to monitor pick-up/drop-off of school children to enhance the safety of children during daily transportation from and to school. The system consists of two main units, a bus unit, and a school unit. The bus unit the system is used to detect when a child boards or leaves the bus. This information is communicated to the school unit that identifies which of the children did not board or leave the bus and issues an alert message accordingly. The system has a developed web-based database-driven application that facilities its management and provides useful information about the children to authorized personnel. A complete prototype of the proposed system was implemented and tested to validate the system functionality. The results show that the system is promising for daily transportation safety.

B.Design and Development of an IOT based wearable device for the Safety and Security of women and girl children

The aim of this work is to develop a wearable device for the safety and protection of women and girls. This objective is achieved by the analysis of physiological signals in conjunction with body position. The physiological signals that are analyzed are galvanic skin resistance and body temperature. Body position is determined by acquiring raw accelerometer data from a triple axis accelerometer.

Acquisition of raw data is then followed by activity recognition which is a process of employing a specialized machine learning algorithm. Real-time monitoring of data is achieved by wirelessly sending sensor data to an open source Cloud Platform. Analysis of the data is done on MATLAB simultaneously. This device is programmed to continuously monitor the subject's parameters and take action when any dangerous situation presents itself. It does so by detecting the change in the monitored signals, following which appropriate action is taken by means of sending notifications/alerts to designated individuals.

C. Child Safety Wearable Device

Parents need not have a smart mobile. Set of keywords are used to gain information from the kit. LOCATION keyword is used to obtain the location of the child. UV keyword is used to obtain the temperature of the surroundings. BUZZ keyword is used to turn on the buzzer which is fixed in that device. SOS is used to send a signal to the device.

D. Smart Intelligent System for Women and Child Security

A portable device which will have a pressure switch. As soon as an assailant is about to attack the person or when the person senses any insecurity from a stranger, he/she can then put pressure on the device by squeezing or compressing it. Instantly the pressure sensor senses this pressure and a conventional SMS, with the victim's location will be sent to their parents/guardian cell phone numbers stored in the device while purchasing it, followed by a call. If the call is unanswered for a prolonged time, a call will be redirected to the police and the same message will be sent. Additionally, if the person crosses some area which is usually not accessed by the person then a message with the real-time location is sent to the parent/guardian's phone via conventional SMS.

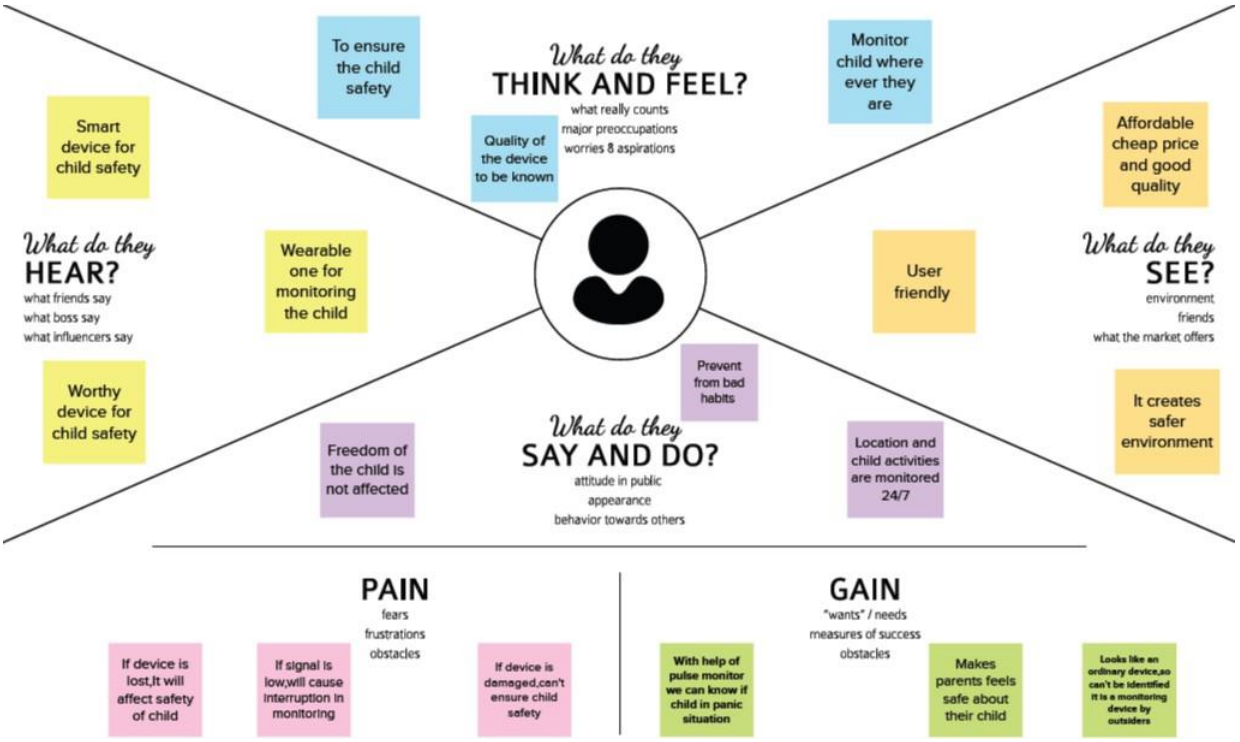
2.3 Problem Statement

The objective of this project is to safeguard the child from threads. Now a days thesafety measures of children has been reduced in huge number. Thus the violence against children increasing day by day. Our project mainly focus on sensing the children's Temperature and Heartbeat. By monitoring the activities the state of thechild is analyzed. By using GSM, if child reaches the critical state then the latitude and longitude of that particular location is sent as an alert message to the parents.

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes mefeel
PS-1	Working Women	Watch my child all thetime	I can't watch my child always	I couldn't concentrate both work and my child	Need of tracking devices
PS-2	A Responsible parent	Make sure of my child's safety	Kid napping	Lack of negligence	worry

3.IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas



3.2 Ideation and Brain storming

Step-1: Team Gathering, Collaboration and Select the Problem Statement

IoT or the internet of things is characterized as a forthcoming innovation that empowers us to create worldwide networked machines and also the devices that can be helped for exchangingof communication. As we all know that the real-time application has been increasing day by day, the smart connection also had increased. Rapid population growth, led to the increase in global life expectancy and the advance of technology, paving the pathway for the creation of age-friendly environments. This had led to the necessity in designing new products for infants protection.

Infants or toddlers need parents' attention 24×7. In this present era, the cases regarding missing children have been increasing day by day, which was the main motivation that comes for the safety of little children. However, the parents cannot continuously monitor their babies' conditions either in normal or abnormal situations. Still, certain incidents likeinfant attacks have been reported, it is necessary to protect the baby.

Step-2: Brainstorm, Idea Listing and Grouping

Team Member 1: S.Nandhini

Child and women safety is a challenging problem nowadays due to antisocial elements in the society. The crime rate is day by day increasing. Schools and working places need high surveillance for ensuring the safety among children and women. Smart phones are playing major role for ensuring the safety, where some mobile based applications provide alert systems. During the emergency, mobile apps alert the control room of nearby police station or caretakers of children. The literature shows that location tracking devices are available in the market, but it does not provide the complete solution to the problem. The solution to this problem is to design an IoT device, which senses the child's location and environment and during emergency, it should send the alert to the parents automatically.

Team Member 2: R.Keerthana

The children are too young to take care of themselves. We cannot monitor the children at all times in school, play area, and outside place. In this paper, we discuss the concept of child safety device based on Internet of things. The aim of this device is to provide safety to the child by allowing the parent to locate the child and view their surroundings. This device can be used to monitor the temperature and motion of the child. If any problem persists, the GSM mobile communication module automatically sends a text message to the parent as SMS.

Team Member 3: P.Kaveri

Crimes on children keep increasing despite actions have been taken by the government. Revealed by [9], the overall percentage of child abasements worldwide is about 80% nowadays, out of which 74% are girls and the remaining are boys. For every 40 seconds, a child is gone missing in the world. Due to that, parents are worried for their children and perhaps, a hard challenge for them to guarantee safety of their children when they are out. To cope with the issue, the system is proposed with these objectives:

Enable tracking of the child's location and capturing of data remotely such as temperature, pulse, respiratory rate, quality of sleep and many more. To show the child's actual data with reference values. Enable sending of notification if the child is out of location or when the device realizes abnormal conditions/situations

Team Member 4: M.Sangeetha

Develop a prototype of IoT wearable smart band connected to parents' mobile apps so that they can monitor the actual condition of children at anytime and anyplace. Besides, unlike existing smart band, which is less focusing on child security aspect, the proposed system emphasizes in getting as much data as possible so that actual situation can be identified, the information indicating children's status, along

with reference values will be sent to parents' devices with the app installed. If children's actual data is not within the range of reference value, alert notification and some suggestions will be sent to parents' devices. Also, when children leave geofences, notification will be sent to parents' device.

Step-3: Idea Prioritization

The section mainly discussed about significant of the research and why this study needs to be carried out. The child security system benefits parents as well as children. Since it aids in locating children, monitoring child's condition and security status instantly at anyplace and any time, parents who often tied up in work or neglect their children are gaining advantages from it. Through the proposed system, immediate actions can be taken forthwith in case the child is threatened. Thus, child security is guaranteed, crime rate related to children is reduced and eventually, parents can rest assured. In fact, reduction of crime rate brings about long-term positive effects such as improving country's reputation and quality of life, increasing community security, safety, and cohesion as well as generating economic benefits for individuals, committee and taxpayers. Besides, the proposed system makes ample use of IoT, proving IoT is evolving which can be included in multiple areas comprising the child security field.
Throughout the research, it is clearly explained the IoT concept, child safety issues and the need of using child security system. Some previous studies have been included for designing the IoT-based child security smart band. It assists parents to monitor their children remotely. In case situations happen, notifications will be sent to parents so that actions can be taken. Through this, child safety can be ensured and crime rate will be reduced. However, the proposed device is not robust enough and does not contain sufficient functions to operate like a mobile phone. Hence, the future enchantments will be adding more features, software, applications, hardware to make the proposed system capable of working more intelligently, meanwhile guarantee the safety of children

3.3 Proposed Solution

S. No	Parameter	Description
1.	Problem Statement (Problem tobe solved)	A tracker that helps parents track a child's location so that the child does not get intodangerous situations.
2.	Idea / Solution description	**1**.Child tracker helps the parents in continuously monitoring the child's location.**2**.They can simply leave their children inschool or parks and create a geofence around the particular location. **3**.By continuously checking the child's location notifications will be generated if the child crosses the geofence. Notifications willbe sent according to the child's location to their parents or caretakers. The entire location data will be stored in the database.
3.	Novelty / Uniqueness	1.A tracker used for child's safety and protection, such that it won't interfere with the day-to-day life of the child as well as be a very easy to use interface for parents has not been developed yet. 2.Hence, the proposed solution will ensure that there is a device that can be used in all areas, and uses different sorts of software's integrated together to maintain accuracy and ensure the safety of the child.
4.	Social Impact / CustomerSatisfaction	1.Reduce the anxiety, worry and nervousnessof a parent when they are not around the child. Having a peace of mind on the child's whereabouts will increase customersatisfaction, as well as the inclusion of an easy to use and interactive user interface. 2.The reduction of child kidnappings, injuries, accidents, and missing children in the country

5.	Business Model (Revenue Model)	Business to Consumer Model Licensing Model Subscription Model FreemiumModel
6.	Scalability of the Solution	By adopting multiple data storage technologies, controlling the IoT data pipeline, and using automated bootstrapping we ensure that the device is highly scalable.

3.4 Problem Solution Fit

1.	CUSTOMER SEGMENT(S)	Our Customers are mainly parents who are working and do not have enough time to take care of their children. Such parents are not provided with availability at anytime to lookafter their children. If the case so they are in need of something to make their children under the surveillance of them.
2.	JOBS-TO-BE-DONE/PROBLEMS	To enhance the operating condition of the developed solution the way it is not supposed to deal with any fault atany point of time so that the child safety can be highly ensured. To ensure the parents that their surveillance ontheir children can never be taken off
3.	TRIGGERS	The trigger which induces the customers is the one that when other working parents give a try to this and commenta positive review on this, they also today center their child safety. The trigger which induces the customers is the one that when other working parents give a try to this and comment a positive review on this, they also today center their child safety.
4.	EMOTIONS: BEFORE/AFTER	Customers(Parents) are being frustrated that their childrenare doing safe or not before using the gadget designed. Once they start to use the developed solution they might feel free to focus on their work and also the surveillance oftheir children would happen with ease at any point of time
5.	AVAILABLE SOLUTIONS	Of course the solutions are available readily in the market such as angel monitoring system, Child GPS Tracking System,Child Safety GSM Kit, etc… One such constraint the customers facing are cost and inefficiencies in the workingonce purchased.
6.	CUSTOMER CONSTRAINTS	The constraints our customers facing are such connectivity issues or may be the protocols being used for communication. There may be chances of issues arised due to technical deficiencies. Giving a second thought, price tobe afforded for buying the developed solution kit might be the one they could not afford.
7.	BEHAVIOUR	Our proposed solution has the modes of working in both offline and Online. In case of any disconnections happen the gadget which ha been developed might tend to work on

		a plan B which includes the backup of the failure of actualworking kit.
8.	CHANNELS of BEHAVIOUR	Our proposed solution has the modes of working in both offline and Online. In case of any disconnections happen the gadget which has been developed might tend to work on a plan B which includes the backup of the failure of actualworking kit.
9.	PROBLEM ROOT CAUSE	Considering the origination of the problem, it occurs in thebase of merely irrespective persons that are no way relatable to the children but for the currency kind of thing and also the child abuse(mainly in case of girl children)
10	OUR SOLUTION	Our Team has highly been intending to develop an efficient solution to overcome all the flaws that the existing solutionshold back still. We are highly on demand to ensure the efficient functionalities of the developing module the way itwill not fail at anytime.

4.REQUIREMENT ANALYSIS

4.1 Functional Requirement

SI No.	Functional Requirement(Epic)	Sub Requirement (Story / Sub-Task)
1.	User Registration	Registration through Form Registration through Gmail Registration through LinkedIn
2.	User Confirmation	Confirmation via EmailConfirmation via OTP
3.	Authentication	Only the authorized person for that product will knowEnsures security
4.	User Interface	The Inventor Able to see the location of children whenthey are out of geofence will also track the exact information about the children
5.	Notification	Notified through mobile and mail

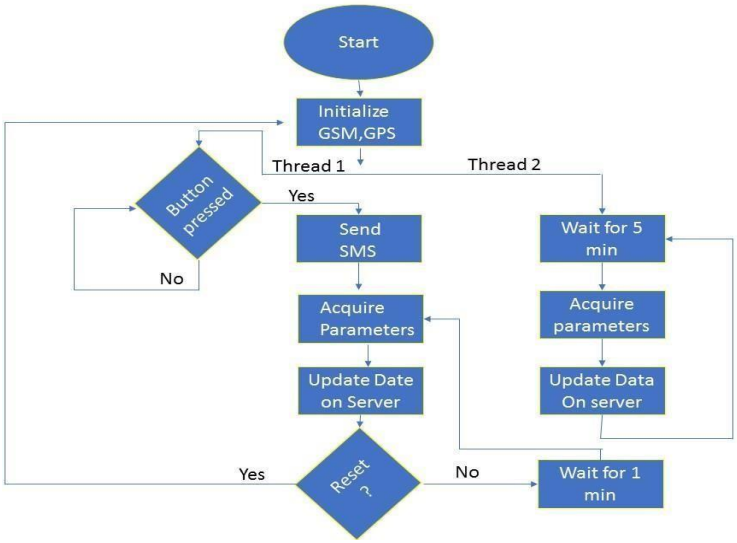
4.2 Non Functional Requirement

SI No.	Non-Functional Requirement	Description
1.	Usability	Accessed through Mobile App Showing location (latitude and longitude) of child and also other measures to ensure safety like notification. Portableand comfortable to use.
2.	Security	Database security and ensuring the safety of theproduct while in use.
3.	Reliability	Once logged in, the webpage is available until logging out of the app, and a comfortable platform orcreates a good environment for users to use.
4.	Performance	Each page must load within 4 seconds and databaseneeds to be updated every few seconds and a notification must be sent immediately if seen a change in the child's location.
5.	Availability	The data must be available whenever needed and theproduct should be able to use at any time.
6.	Scalability	The process must be flexible at any time to use and versatile

5. PROJECT DESIGN

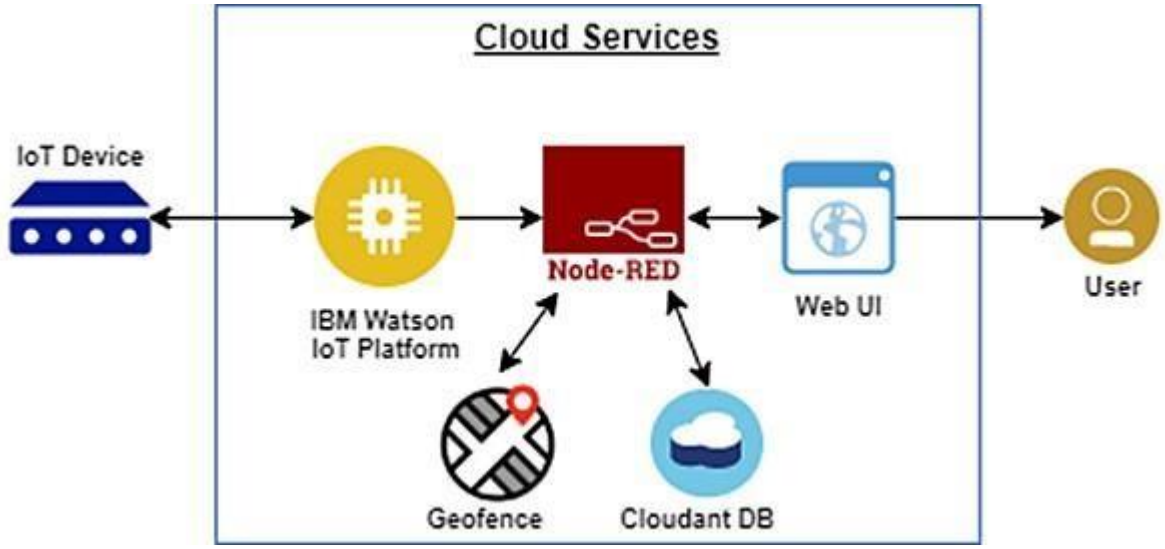
5.1 Data Flow Diagrams

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



5.2 Solution and Technical Architecture

The device has IOT monitoring allows to monitor the child from anywhere with anyportable devices. Ultrasonic sensor are used which sense when someone near childand alarm buzz will established SMS and dialing function is made to parent



5.3 User Stories

User Type	Functional Requirement(Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1 (FATHER)	As a user, I can register by entering my email, password, and confirming my password. I can access the location of my children using the credentials provided as a Father.	I can access my account / dashboard and receive confirmation email & click confirm	High	Sprint-1
		USN-2 (MOTHER)	As a user, I can register by entering my email, password, and confirming my password. I can access the location of my children using the credentials provided as a Mother.	I can access my account / dashboard and receive confirmation email & click confirm	High	Sprint-1
		USN-3 (GUARDIAN/ CARETAKER)	As a user, I can also monitor the children's activities using a safety gadget monitoring system.	I can access my account / dashboard and receive confirmation email & click confirm	Medium	Sprint-1
	Login	USN-4	As a user, I can log into the application by entering email & password.	I can access my account / dashboard.	Medium	Sprint-2
	Dashboard	USN-5	As a user, I can fix the geofence for my child's location so that I will receive alerts if	I can monitor the current location of my child.	High	Sprint-2

			my child crosses the geofence.			
Customer (Web user)	Registration	USN-1 (FATHER)	As a user, I can register by entering my email, password, and confirming my password. I can access the location of my children using the credentials provided as a Father.	I can access my account / dashboard and receive confirmation email & click confirm	High	Sprint-1
		USN-2 (MOTHER)	As a user, I can register by entering my email, password, and confirming my password. I can access the location of my children using the credentials provided as a Mother.	I can access my account / dashboard and receive confirmation email & click confirm	High	Sprint-1
		USN-3 (GUARDIAN/ CARETAKER)	As a user, I can also monitor the children's activities using a safety gadget monitoring system.	I can access my account / dashboard and receive confirmation email & click confirm	Medium	Sprint-1
	Login	USN-4	As a user, I can log into the application by entering email & password.	I can access my account / dashboard.	Medium	Sprint-2
	Dashboard	USN-5	As a user, I can fix the geofence for my child's location so that I will receive alerts if my child crosses the geofence.	I can monitor the current location of my child.	High	Sprint-2
Customer Care	Dashboard	USN-6	As a customer care service person, whenever I receive a complaint, I forward the complaint and ensure that the complaint is resolved.	I can keep track of all the complaints and the status of the complaints received.	Medium	Sprint-3

Administrator	Admin Dashboard	USN-7	As an administrator, I will take care of all the payment processes, queries and complaints and login credentials.	I can access all the customer details, payment details and complaints received.	High	Sprint-4

6. PROJECT PLANNING & SCHEDULING

6.1 Sprint Planning Estimation

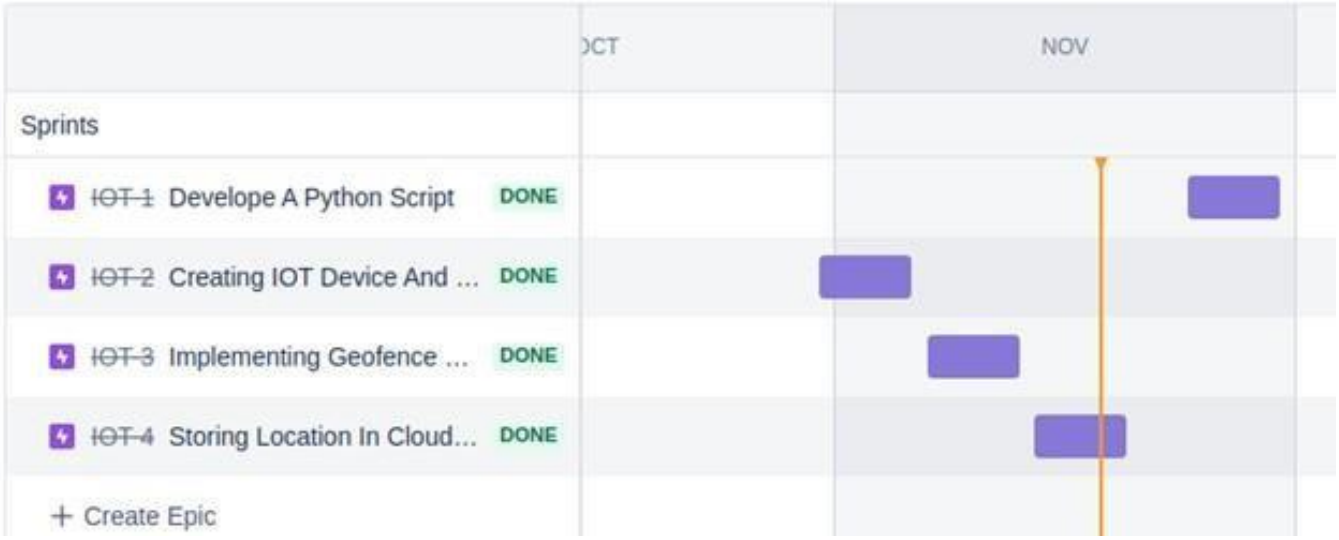
Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, and password, and confirming my password.	4	High	NANDHINI S
Sprint-1	Confirmation Email	USN-2	As a user, I will receive a confirmation email once I have registered for the application	4	High	KEERTHANA R
Sprint-1	Authentication	USN-3	As a user, I can register for the application through Gmail and mobile app.	4	Medium	KAVERI P
Sprint-1	Login	USN-4	As a user, I can log into the application by entering email & password	4	High	SANGEETHA M
Sprint-1	Dashboard	USN-1	As a user, I need to be able to view the functions that I can perform	4	High	KAVERI P
Sprint-2	Notification	USN-1	As a user, I should be able to notify my parent and guardian in emergency situations	10	High	KEERTHANA R
Sprint-2	Store data	USN-2	As a user, I need to continuously store my location data into the database.	10	Medium	NANDHINI S
Sprint-3	Communication	USN-3,1	I should be able to communicate with my parents	6	Low	SANGEETHA M
Sprint-3	IoT Device – Watson communication	USN-1,4	The data from IoT device should reach IBM Cloud	7	Medium	NANDHINI S, KEERTHANA R
Sprint-3	Node RED-Cloudant DB communication	USN-1,2	The data stored in IBM Cloud should be properly integrated with Cloudant DB	7	High	KAVERI P, SANGEETHA M
Sprint-4	User – WebUI interface	USN-1,4	The Web UI should get inputs from the user	6	High	NANDHINI S, KAVERI P

Sprint-4	Geofencing	USN-2,3,1	The geofencing of the child should be done based on the geographical coordinates	7	High	KEERTHANA R, SANGEETHA M

6.2 Sprint Delivery Schedule

Sprint	Total Story Points	Duration	Sprint StartDate	Sprint EndDate (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	05 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	19 Nov 2022

6.3 Reports from JIRA



7. CODING & SOLUTIONING

7.1 Feature 1

```
import json
import wiotp.sdk.device
import time
myConfig ={
   "identity":{
   "orgId": "rdegyk",
   "typeId":"safetygad",
   "deviceId":"gad1"
   },

   "auth":{
      "token":"gyg06jzil(!lTGsKx
      V"
     }

}

client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()
```

```
while True:
   name="locater"
   #in area location
   #latitude=13.145997614532394

   #longitude=80.0619303452179#out
   area location latitude=13.15412
   longitude=80.05729
   myData={'name':name, 'lat':latitude, 'lon':longitude}

   client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0,
onPublish=None)

   print("Data published to IBM Iot platform:

   ",myData)time.sleep(2)

client.disconnect()
```

7.2 Geofence

A geofence is a virtual perimeter for a real-world geographic area.[1] A geofence could be dynamically generated (as in a radius around a point location) or match a predefined set of boundaries (such as school zones or neighborhood boundaries).The use of a geofence is called geofencing, and one example of use involves a location-aware device of a location-based service (LBS) user entering or

exiting a geofence. This activity could trigger an alert to the device's user as well as messaging to the geofence operator. This info, which could contain the location of the device, could be sent to a mobile telephone or an email account.

AddingGeofence

```
package com.example.geofence;
import android.app.Pending Intent;
import android.content.Context;
import android.content.ContextWrapper;
import android.content.Intent;
import android.widget. Toast;
import com.google.android.gms.common.api.ApiException;
import com.google.android.gms.location. Geofence;
import com.google.android.gms.location. GeofenceStatusCodes
import com.google.android.gms.location. Geofencing Request;
import com.google.android.gms.maps.model. LatLng:
public class GeofenceHelper extends ContextWrapper
private static final String TAG = "Geofence Helper;
Pendingintent pendingintent;
public GeofenceHelper(Context base)
super(base)
public Geofencing Request getGeofencing Request(Geofence ged
return new GeofencingRequest. Builder0
add Geofence(geofence)
setinitialTrigger(GeofencingRequest.INITIAL TRIGGERENTER)
```

```
build0:
)
public Geofence getGeofence(String ID, LatLng latLng, float radi
transition Types)
return new Geofence.Builder()
setCircular Region(lat Lng.latitude, latLng.longitude, radius)
.set Requestld(ID)
setTransition Types(transition Types)
setLoitering Delay (5000)
setExpirationDuration(Geofence. NEVER_EXPIRE)
build0:
public Pending Intent getPendingintent0
if (pendinglntent I= null)
return pendinglntent
Intent intent = new Intent (this, GeofenceBroadcastReceiver.clas
pendingintent= Pendingintent. get Broadcast (this, 2607, intent,
Pendinglntent. FLAG_IMMUTABLE);
return pendinglntent;
public String getErrorString(Exception e)
if (e instanceof ApiException)
ApiException apiException = (ApiException) e;
switch (apiException.getStatus Code(0)
case GeofenceStatusCodes
GEOFENCE NOT AVAILABLE:
return "GEOFENCE NOT AVAILABLE";
case GeofenceStatusCodes
GEOFENCE TOO MANY_GEOFENCES:
return "GEOFENCE_TOo_MANY_GEOFENCES:
case GeofenceStatusCodes
```

GEOFENCE_TOO_MANY_PENDING INTENTS:

return 'GEOFENCE_TO0_MANY PENDING_INTENTS";

return e.getLocalizedMessage();

Alert Notification

```
package com.example.geofence;
import android.content.BroadcastReceiver;
import android.content.Context
import android.content.Intent;
import android.location.Location
import android.os.CountDown Timer;
import android.util.Log
import android.widget.Toast;
import com.google.android.gms.location.Geofence;
import com.google.android.gms.location. GeofencingEvent
import java.util.List
import android.os.Handler
public class GeofenceBroadcast Receiver extends Broadcast Receiver
private static final String TAG "GeofenceBroadcast Receiv
@Override public void on Receive (Context context, Intent intent)
/ TODO: This method is called when the BroadcastReceiver is receiving
l an Intent broadcast
IW.*
Toast.makeText(context, "GEOFENCE ENTERED", Toast. LENGTH SHORT)
final Toast mToastToShow; int toast DurationlnMilliSeconds 1200000;
mToastToShow= Toast.makeText(context, "GEOFENCE EXITED",
Toast.LENGTH LONG)
//Set the countdown to display the toast CountDownTimer toastCountDo
toastCountDown = new CountDown Timer(toastDurationin MilliSeconds, 10
public void on Tick(long millisUntilFinished)
mToastToShow.show0:
public void onFinish0
mToast ToShow.cancel0:
```

://Show the toast and starts the countdown mToastToShow.show):
toastCountDown.start(0:/
NotificationHelper notification Helper = new Notification Helper(context):
notificationHelper.sendHigh PriorityNotification ('GEOFENCE TRANSITION
MapsActivity.class);
GeofencingEvent geofencing Event = GeofencingEvent.fromintent(intent),
if (geofencingEvent.hasError0)
Log.d(TAG, "onReceive: Error receiving geofence event...):
return;
List geofencelL ist = geofencingEvent.get TriggeringGeofences 0:
for (Geofence geofence: geofenceList)
Log.d(TAG, 'on Receive:"+ geofence.get Requestid0):
IW Location location = geofencingEvent.getTriggeringLocation0;
int transitionType = geofencing Event.getGeofenceTransition0;
switch (transition Type)
case Geofence.GEO FENCE TRANSITION_ENTER:
notificationHelper.sendHigh PriorityNotification ("'Entered the Location', "
MapsActivity.class);
break:
case Geofence.GEOFENCE TRANSITION EXIT:
notificationHelper.sendHigh PriorityNotification ("'Exited the Location
MapsActivity.class);
break:

8.RESULTS

It is being used as it allows the correct sample of respondents to be selected due to which becomes convenient to obtain results. Besides, the results offered are affordable and usable. Since the respondents are properly chosen, the results tend to be more accurate, precise and reliable.

9.ADVANTAGES & DISADVANTAGES

9.1 Advantages

In our system, we provide an environment where this problem can be resolved in an efficient manner. It makes parents to easily monitor their children in real time just like staying beside them as well as focusing on their own career without any manual intervention.

9.2Disadvantages

It can be easily removed or damaged while playing and by any intruders.This requires internet connectivity to get monitored and to notify alert messages to parents

10.CONCLUSION

The word Future resembles the word Children. As Dr. A.P.J Abdul Kalam’s words “Youngsters are the future pillars of one’s nation", today's children are tomorrow's youngsters, preserving their dreams and life for a better future is necessary. Therefore, each and every parent should take care of their own children, without letting them to fall into the dark world of abusements, which entirely ruin them physically, mentally and emotionally destroying our future. Hence, considering the importance of our future, our project makes it easy for parents to track their children and to visually monitor them on regular basis, which makes them ensure the safety of their children and reduces the rate of incidents of child abuse.

FUTURE SCOPE

In our system, we automatically monitor the child in real time using Internet of Things, with the help of GPS, GSM, and Raspberry Pi. This system requires network connectivity, satellite communication, and high-speed data connection when we use web camera and GPS to lively monitor. It is difficult to monitor when there occurs any hindrance to satellite communication or any network issue. There also occurs time delay in video streaming through the server. Hence in the future, theseissues can be overcome by using Zigbee concept or accessing the system without internet and using high-speed server transmission.

Github link: https://github.com/IBM-EPBL/IBM-Project-41000-1660638272